INTEGRATED LOW-VOLTAGE TRANSMIT/RECEIVE SWITCH FOR ULTRASOUND IMAGING SYSTEM

ABSTRACT OF THE DISCLOSURE

A low-voltage transmit/receive switch that acts to protect sensitive low-voltage electronics from high-voltage pulse signals used to drive an ultrasonic transducer. The low-voltage transmit/receive switch comprises a series resistor and a parallel MOSFET pair. The parallel MOSFETs are low-voltage devices. The low-voltage transmit/receive switch is placed between the output of a high-voltage pulser and the input of a receive pre-amplifier. If dual high- and low-voltage pulsers are used, then the low-voltage pulser is connected so that it is also protected from the high-voltage pulse signals by the low-voltage transmit/receive switch. In an alternative embodiment, the low-voltage pulser and the receive pre-amplifier are protected from the high-voltage pulse signals by a high-voltage transmit/receive switch.